

Amendments to the Drawings:Replacement Sheet.

The attached Replacement Sheet includes changes to Figure 8. This sheet, which includes Figure 8, replaces the original sheet. In the attached replacement sheet containing Figure 8, the thread root, element 129, has been expressly pointed out. No new matter was introduced.

New Sheet.

The attached New Sheet contains Figure 40. In Figure 40, the drawing from Figure 4 has been re-drawn in its entirety and the following elements have been expressly pointed out: the shaft, element 10; the axis, element 123; the first shaft element, element 124; the second shaft element, element 125; and the radius, element 127. No new matter was introduced.

Attachments: Replacement Sheet, New Sheet.

REMARKS/ARGUMENTS**Status of the Claims**

Claims 1-26 were originally filed in the application filed on November 21, 2003. The RCE mailed on June 19, 2006 canceled Claims 1-26 and added new Claims 27-60. The Amendment mailed on February 23, 2007 canceled Claims 33, 36, 45, 48, 56, and 59. In the present Amendment Applicants canceled Claims 27-32, 34-35, 37-44, 46-47, 49-55, 57-58, and 60 and added new Claims 61-84. As such, upon entry of the present Amendment, Claims 61-84 are pending.

Applicants respectfully request reconsideration and withdrawal of rejection in view of the following remarks.

A. Double Patenting

Claims 27-32, 34, 35, 37-44, 46, 47, 49-55, 57, 58, and 60 stand provisionally rejected on the ground of nonstatutory obviousness-type double patenting. The Examiner alleges Claims 27-32, 34, 35, 37-44, 46, 47, 49-55, 57, 58, and 60 of this application are not patentably distinct over claims 12-34 of copending U.S. Application No. 10/430,794, and claims 1-10 of copending U.S. Application No. 11/444,672, and claims 1-23 of copending U.S. Application No. 11/444,673, and claims 1-19 of copending U.S. Application No. 11/191,820, in view of U.S. Patent No. 3,877,502 to Hunckler. (hereinafter referred to as "Hunckler").

Without agreeing to the merits of the Examiner's rejection, upon the Examiner's allowance of the present invention, Applicants are willing to submit a terminal disclaimer in compliance with 37 C.F.R. § 1.321(c).

B. Claim Rejections under 35 U.S.C. § 103(a)

Claims 27-32, 34, 35, 37-44, 46, 47, 49-55, 57, 58, and 60 stand rejected under 35 U.S.C. § 103(a). Examiner alleges that Claims 27, 30-32, 50, and 53-55 are unpatentable over Hunckler in view of U.S. Patent No. 4,973,209 to Essom (hereinafter referred to as "Essom") and U.S. Patent No. 6,062,786 to Garver (hereinafter referred to as "Garver"). The Examiner alleges that Claims 28, 29, 34, 35, 51, 52, 57, and 58 are unpatentable over

Hunckler in view of Essom, Garver, and U.S. Patent No. 3,385,340 to Evans (hereinafter referred to as "Evans"). The Examiner alleges that Claims 37 and 60 are unpatentable over Hunckler in view of Essom, Garver, and U.S. Patent No. 5,626,449 to McKinley. The Examiner alleges that Claims 38, 41, and 42 are unpatentable over Hunckler in view of Essom. The Examiner alleges that Claims 39, 40, 46, and 47 are unpatentable over Hunckler in view of Essom and Evans. The Examiner alleges that Claims 43 and 44 are unpatentable over Hunckler in view of Essom and U.S. Patent No. 6, 296,432 to Kato (hereinafter referred to as "Kato"). The Examiner alleges that Claim 49 is unpatentable over Hunckler in view of Essom and McKinley. Applicants respectfully disagree and request that the Examiner's rejection be withdrawn.

Without agreeing to the merits of the Examiner's rejection, and to expedite the prosecution of this Application, Applicants hereby cancel Claims 27-32, 34-35, 37-44, 46-47, 49-55, 57-58, and 60, without prejudice. Applicants reserve the right to file a continuation to pursue the subject matter covered in these canceled Claims.

Applicants point out that the Claims 61-84 submitted herewith are patentable over U.S. Patent No. 3,877,502 to Hunckler (hereinafter referred to as "Hunckler"), U.S. Patent No. 4,973,209 to Essom *et al.* (hereinafter referred to as "Essom"), U.S. Patent No. 6,062,786 to Garver *et al.* (hereinafter referred to as "Garver"), U.S. Patent No. 3,520,343 to Evans (hereinafter referred to as "Evans"), U.S. Patent No. 5,626,449 to McKinley (hereinafter referred to as "McKinley"), and U.S. Patent No. 6,296,432 to Kato (hereinafter referred to as "Kato"). As such, Applicants respectfully request prompt allowance of Claims 61-84.

In order to establish a *prima facie* obviousness rejection there must be some teaching or suggestion to make the claimed combination. See M.P.E.P. § 2143 (Citing *In re Vaack*, 947 F.2d 488 (Fed.Cir.1991)). In addition, there must be a reasonable expectation of success to modify or combine the prior art to reject claims as *prima facie* obvious. See M.P.E.P. § 2143.02 (citing *In re Merck & Co., Inc.*, 800F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986)). Finally, "to establish *prima facie* obviousness of a claimed invention, all the claim limitations

must be taught or suggested by the prior art." M.P.E.P. § 2143 (citing *In re Royka*, 490 F.2d 981 (CCPA 1974)).

If the "proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." M.P.E.P. § 2143.01. Similarly, "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teaching of the references are not sufficient to render the claims *prima facie* obvious." M.P.E.P. § 2143.01. When evaluating whether one or more prior art references suggests or teaches all the claim limitations, each prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. M.P.E.P. § 2141.02.

Hunckler, Essom, and Garver

Applicants submit at the outset that there is no teaching or suggestion to combine Essom and Garver. Assuming *arguendo* that the Examiner could combine Essom and Garver the proposed combination of Essom and Garver would hold against the principle of operation of the respective references. The principle of Essom includes a thread structure forming an interference fit with a conventional nut. See Essom, Col. 5, ll. 38-41. Essom teaches a thread crest region 32 which forms an interference fit with a conventional nut to promote thread interference. See Essom, Col. 5, ll. 38-41. On the other hand, Garver teaches a contrary principle, namely, the prevention of cross-threading and jamming of threads. See Garver Col. 1, ll. 15-20. While Essom teaches promoting thread interference, Garver could be said to prevent thread interference. Because Essom teaches away from the principle of Garver, one of ordinary skill in the art would not be motivated to combine Essom with Garver. Therefore, for at least this reason, the teachings of Essom and Garver are not sufficient to render Claims 61-84 *prima facie* obvious.

Hunckler, Essom, Garver, and Evans

At the outset, Applicants submit that the Examiner has not established a *prima facie* obviousness case because there is no teaching or suggestion to combine Evans and Garver. Assuming *arguendo* that the Examiner could combine Essom and Garver the proposed

combination of Evans and Garver would change the principle of operation of the cited references. Evans teaches "a male fastener designed for root interference with the crest of an internal thread." See Evans, Col. 1, ll. 61-64. On the other hand, Garver teaches a contrary principle, namely, the prevention of cross-threading and jamming of threads. See Garver Col. 1, ll. 15-20. While Evans teaches promoting thread interference, Garver could be said to prevent thread interference. Because Evans teaches away from the principle of Garver, one of ordinary skill in the art would not be motivated to combine Evans with Garver. Therefore, for at least this reason the teachings of Evans and Garver are not sufficient to render Claims 61-84 *prima facie* obvious.

Hunckler, Essom Garver, and McKinley

At the outset, Applicants submit that the Examiner has not established a *prima facie* obviousness case because there is no teaching or suggestion to combine Essom with McKinley. Further, Applicants submit that the Examiner's proposed combination of Essom and McKinley would change the principle of operation of McKinley. McKinley teaches a nut that prevents "excessive resistance or strain on the shaft" to allow the ramp surfaces to function. See McKinley, Col. 5, ll. 7-9. McKinley teaches a small shoulder thickness dimension in order to prevent excessive resistance on the shaft. See McKinley, Col. 5, ll. 7-9. To the contrary, Essom teaches an interference fit with a nut, thereby creating stress and strain on the shaft. See Essom, Col. 5, ll. 38-41. Consequently, the Examiner's proposed combination of Essom and McKinley would change the principle of operation of McKinley by creating excessive resistance and strain on the shaft, thereby rendering the ramps of McKinley inoperable. Accordingly, one of ordinary skill in the art would not be motivated to combine Essom and McKinley. For at least this reason, the teachings of Essom and McKinley are not sufficient to render Claims 61-84 *prima facie* obvious.

Hunckler and Essom

Applicants point out that there is no teaching, suggestion, or motivation to combine Hunckler and Essom. Assuming *arguendo* that the Examiner could combine Hunckler and Essom, the proposed combination would hold against the principle of operation of the respective references. The principle of Essom includes a thread structure forming an interference fit with a conventional nut. See Essom, Col. 5, ll. 38-41. Essom teaches a

thread crest region 32 which forms an interference fit with a conventional nut to promote thread interference. See Essom, Col. 5, ll. 38-41. On the other hand, Hunckler teaches a contrary principle, namely locking the nut "16" by "tilting" the nut by way of a hump "12." See Hunckler, Col. 2, ll. 19-22. The tilted nut "16" thereafter is locked at positions "18" and "19." See Hunckler, Col. 2, ll. 23-26. Plainly, one of ordinary skill in the art would recognize that the threads of Essom would prevent the nut "16" of Hunckler from engaging the hump "12" or the saddle clamp "25" of Hunckler. Therefore, the teachings of Hunckler and Essom are not sufficient to render Claims 61-84 *prima facie* obvious.

Hunckler, Essom, and Evans

At the outset, Applicants submit that the Examiner has not established a *prima facie* obviousness case because there is no teaching, suggestion, or motivation to combine Essom and Evans. Assuming *arguendo* that the Examiner could combine Essom and Evans the proposed combination of Essom and Evans would change the principle of operation of the cited references. The principle of Essom includes forming an interference fit with a thread crest region 32 and a nut. See Essom, Col. 5, ll. 38-41. On the other hand, the entire point of Evans is to provide a male fastener designed for root interference. See Evans, Col. 1, ll. 62-67. Clearly one of ordinary skill in the art would not combine the threads of Evans with the threads of Essom because the tolerance requirements for such a thread. See Evans, Col. 1, ll. 27-34. Therefore, for at least this reason the teachings of Essom and Evans are not sufficient to render Claims 61-84 *prima facie* obvious.

Hunckler, Essom, and Kato

At the outset, Applicants submit that the Examiner has not established a *prima facie* obviousness case because there is no teaching, suggestion, or motivation to combine Essom with Kato. Further, Applicants submit that the Examiner's proposed combination of Essom and Kato would hold against the principle of operation of the respective references. The principle of Essom includes a thread structure forming an interference fit with a conventional nut. See Essom, Col. 5, ll. 38-41. Essom teaches a thread crest region 32 which forms an interference fit with a conventional nut to promote thread interference. See Essom, Col. 5, ll. 38-41. On the other hand, the purpose of Kato is to prevent misalignment, encroaching, and seizure of threads between a bolt and a nut. See Kato, Col.

1, ll. 41-44. To do so, Kato teaches a spiral guide groove 104A, with a diameter smaller than the inner diameter of a nut 105, connected to the thread 103A of the axle 103. See Kato, Col. 2, ll. 58-67. While Essom teaches promoting thread interference, Kato could be said to prevent thread interference. Because Essom teaches away from the principle of Kato, one skilled in the art would not be motivated to combine Essom with Kato. Therefore, for at least this reason the teachings of Essom and Kato are not sufficient to render Claims 61-84 *prima facie* obvious.

Hunckler, Essom, and McKinley

For the reasons detailed above, Applicants submit that the Examiner's proposed combination of Essom and McKinley would change the principle of operation of McKinley. Therefore, for at least this reason the teachings of Essom, Hunckler, and McKinley are not sufficient to render Claims 61-84 *prima facie* obvious.

Conclusion

In view of the foregoing, Applicants respectfully request reconsideration, withdrawal of rejections, and allowance of all Claims now present in the application.

The Commissioner is authorized to charge any required fees, including any extension and/or excess claim fees, any additional fees, or credit any overpayment to Deposit Account No. 502318.

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Respectfully Submitted,

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